AFFIDAVIT

STATE OF OREGON
COUNTY OF BENTON

BEFORE ME, the undersigned authority, a Notary Public of the State of Oregon, this day personally appeared **ALAN WALLACE**, Affiant, who, upon being first duly sworn by me, deposed and stated the following:

1. Affiant's full name is **Alan Keith Wallace**, and his residence address is:

2690 NW Royal Oaks Drive
Corvallis, OR 97330.

2. Affiant's business address is:

School of Electrical Engineering and Computer Science
Owen Hall 220
Oregon State University
Corvallis, Oregon 97331-3211
Tel: (541) 737-2995

3. Affiant is a college teaching professor and Doctor who is now teaching Electrical Power Engineering at Oregon State University. Affiant has taught in this capacity with Oregon State University continuously for twenty-one (21) years. Prior to that, Affiant taught electrical engineering science for seven (7) years, as a professor at the University of Nottingham, Nottingham, England, for a total tenure of twenty-eight (28) years. Affiant has been involved in motor design and analysis for forty (40) years.

4. Affiant is the Director of Oregon State University's Motor Systems Resource Facility (MSRF), which is a laboratory for researching and testing of electric motors and drives. This laboratory has the highest power rating of any university laboratory in the nation, at 750 KVA.

5. Affiant attaches hereto his curriculum vitae for further reference as to Affiant's knowledge and qualifications to make this Affidavit.

6. Affiant has read and understood patent application serial No. 10/602,966, filed 06/24/2003, entitled "Electric Motor Windings" by Gerald Goche, inventor. Also, Affiant has read and examined Amendment C and Amendment D of said application.

7. Affiant tested a motor at MSRF built by the inventor, Gerald Goche, which had a main winding and an auxiliary winding installed in the same slot at the same time, in one winding operation, following the disclosure of his said patent application.

8. Affiant has studied the electric motor winding configuration developed by Gerald Goche, and Affiant is otherwise familiar with its underlying concepts. Affiant has determined that the technology is sound and that the benefits mentioned in the patent application are achieved.

9. Following the teachings of the Goche winding configuration, Affiant developed formulae for a modified form of the equivalent circuit for this connection and to calculate the new parameters. Using this model and the new parameters Affiant has predicted the performance of the new, modified motor to provide:

a) a ~~substantial~~ reduction of the input current to the motor compared to corresponding load conditions for the original motor;

b) an improvement in the power factor, which becomes very close to unity over a wide range of loads; and

c) performance improvement over a wide range of loads, when compared to an unmodified motor to which capacitors have been added at the terminals in the conventional way for power factor correction.

10. Affiant states and confirms that in his opinion a person of ordinary skill in this art would understand from the patent application as initially filed that the main winding and the additional winding are positioned adjacent each other about the same stator tooth, or group of stator teeth that form a pole, so that their respective magnetic fields affect each other. This conclusion is reached in view of the disclosure that said windings are made in one operation at the same time and in view of the general knowledge of winding machines by those of ordinary skill in this art. It would also be understood that each winding is made of an insulated conductor and that no wires are bare.

11. Affiant further states that, in his opinion, a worker in the field of motors who possesses ordinary skill would understand that the main and additional windings as disclosed in said patent application are adjacent to one another along their respective lengths because the application discloses that said main and additional windings are reversely wound with respect to one another and are built at the same time in a single operation. This would clearly explain to said worker that the main and additional windings are physically superimposed about the same stator tooth or multiple continuous stator teeth. Therefore, workers of ordinary skill in this field would understand what to do without undue experimentation upon being told to make the two windings in a single operation at the same time. The result would be that the main and additional windings would be wound at the same time by a winding machine and said main and additional windings would be adjacent to one another along their respective extents, *i.e.*, they would be wound about the same stator tooth with the respective magnetic fields affecting each other, or they would be wound about the same group of contiguous stator teeth with their respective magnetic fields affecting each other. However, it is possible to make the main and additional windings separately, not as a single step and not at the same time, and to thereafter place the main and additional windings into adjacent relation to one another along their respective lengths.

FURTHER, AFFIANT SAYETH NAUGHT.

AFFIANT

SUBSCRIBED and SWORN TO before me this 26th day of August, 2005, by ALAN WALLACE who is personally known to me or who did produce the following identification Oregon Driver License.

OFFICIAL SEAL
KAREN L BRAMBLETT
NOTARY PUBLIC–OREGON
COMMISSION NO. 365364
MY COMMISSION EXPIRES MAR 4, 2007

Karen L. Brambletts
NOTARY PUBLIC
My Commission Expires: March 4, 2007